

2020

BOTANY — HONOURS

Paper : SEC-A-2

(Biofertilizers)

Full Marks : 80

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Answer **any ten** in brief : 2×10
- (a) Name one symbiotic and one non-symbiotic N₂ fixer.
 - (b) What is Ericoid Mycorrhiza?
 - (c) What is YEM?
 - (d) Name two bacteria in sewage that reduces the BOD.
 - (e) What is bacterization?
 - (f) Write two advantages of biofertilizer.
 - (g) What is vermicompost?
 - (h) Why is cyanobacteria considered as biofertilizer?
 - (i) What is Hartig Net?
 - (j) Why the *Azolla-Anabaena azollae* association is more suitable for rice cultivation?
 - (k) Mention the two species of *Rhizobium* with their associated legume plants.
 - (l) Mention the scientific name of one actinorhizal angiospermic genus along with its symbiont.
 - (m) Who has coined the term 'organic farming'? Who was known as 'father of organic farming'?
 - (n) Name two important properties of an ideal carrier material of *Rhizobium*.
 - (o) What is algalization?
2. Write short notes on (**any four**) : 5×4
- (a) Types of organic fertilizers.
 - (b) Major advantages and limitations of biofertilizer.
 - (c) Methods of vermicomposting.
 - (d) Isolation and inoculum production of VA mycorrhiza.
 - (e) Associative symbionts and soil fertility.
 - (f) Mass multiplication of *Azotobacter*.

Please Turn Over

3. Answer **any four** questions :

- (a) How are N-biofertilizers added to the field? What is seed pelleting? 6+4
- (b) Write a note on mass production of cyanobacterial biofertilizer. How can cyanobacteria increase soil fertility? 7+3
- (c) Why is *Azospirillum* also known as N-fixing spirillum? Briefly describe the mass multiplication procedure of *Azospirillum*. Write a short note on the different types of media used for mass production of *Azospirillum*. 2+4+4
- (d) Write a short note on recycling of biodegradable agricultural and industrial wastes. 5+5
- (e) What do you mean by actinorhizal symbiosis? Briefly describe the infection process and nodule formation in an actinorhizal species studied. 2+8
- (f) Discuss the following :
- (i) Differences between ectomycorrhiza and endomycorrhiza.
- (ii) Advantages and disadvantages of green manuring. 5+5
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